

Formulation of BDCP HCP/NCCP Biological Goals and Objectives

Introduction

The biological goals and objectives that are established for the BDCP will provide the basis for the development of the conservation measures for the plan. As the BDCP Steering Committee considers biological goals and objectives for the plan, it should take into account the “Five-Point” policy of the U.S. Fish and Wildlife Service and the National Marine Fisheries Service, including the following guidance:

Explicit biological goals and objectives clarify the purpose and direction of an HCP’s operating conservation program. They provide the rationale behind the HCP’s terms and conditions, promote an effective monitoring program and, where appropriate, help determine the focus of an adaptive management strategy. ... In the context of HCPs, biological goals are the broad, guiding principles for the operating conservation program of the HCP. ...If the operating conservation program is relatively complex, the biological goal is divided into manageable and measurable objectives. Biological objectives are the different components needed to achieve the biological goal such as preserving sufficient habitat, managing the habitat to meet certain criteria, or ensuring the persistence of a specific minimum number of individuals. (65 FR 106, June 1, 2000)

The Steering Committee will need to develop working draft biological goals and objectives as identified in the next steps described in the Points of Agreement document. The purpose of the working draft goals and objectives will be to provide initial direction for development of elements of the BDCP HCP/NCCP, including the habitat restoration and enhancement program and conservation actions to address other stressors. Conservation measures will be developed to achieve each of the objectives. The working draft goals and objectives are non-binding and will evolve through an iterative process as elements of the BDCP are developed and become better defined. We fully anticipate there will be refinement or elimination of goals and objectives and addition of new goals and goals and objectives as we proceed through plan development.

The following sections provide the context for the development of biological goals and objectives, define the relationship of goals and objectives to other BDCP elements, and describe a framework for developing working draft biological goals and objectives. These are offered by SAIC at this juncture as an example of how these concepts might be framed and defined, with the expectation that they will be subject to further refinement by a technical team convened by the Steering Committee for this purpose, as proposed below.

Relationship of Biological Goals and Objectives to Other BDCP Elements

Within the BDCP, biological goals and objectives are nested between higher-level Planning Agreement goals and objectives and applicable conservation measures that tier from biological

objectives. These terms, as they will be used in the BDCP development process, may be defined in Table 1 as follows.

Table 1. Proposed Definition of Terms

Term	Definition
Planning Goals (from the BDCP Planning Agreement section 3)	Broad statements of the regulatory and conservation outcomes of implementing the BDCP desired by signatories to the BDCP Planning Agreement.
Preliminary Conservation Goals (from the BDCP Planning Agreement section 6)	Broadly stated desired outcomes of implementing the BDCP conservation strategy.
Biological Goal	A broad statement that identifies specified expected outcomes with full implementation of the BDCP for each covered species and natural community. Biological goals step down from the conservation goals and collective achievement of the biological goals will achieve the conservation goals.
Biological Objective	A specific statement that identifies the expected outcome with full implementation of applicable conservation measures. Biological objectives step down from the biological goals and collective achievement of the biological objectives will achieve the biological goals.
Conservation Measure	A specific action identified in the BDCP conservation strategy that, when implemented, partially or wholly achieves one or more BDCP biological objectives.

A hypothetical example demonstrating the relationship among planning goals, conservation goals, biological goals, biological objectives, and conservation measures is presented below.

1. **Planning Goal:** Provide for the conservation and management of Covered Species within the Planning Area (actual goal from the Planning Agreement).
2. **Preliminary Conservation Goal:** Provide for the protection of Covered Species and associated natural communities and ecosystems that occur with the Planning Area (actual goal from the Planning Agreement).
3. **Biological Goal:** Reduce the adverse effects of important species stressors within the Delta to improve the production (reproduction, growth, and survival), abundance, and distribution of Sacramento River Chinook salmon. [Note that there will likely be multiple biological goals applicable to each conservation goal.]
4. **Biological Objective:** Maintain and increase the extent of Sacramento River Chinook salmon rearing habitat in the Delta. [Note that there will be multiple biological objectives for each biological goal.]

5. **Conservation Measure:** Restore XX acres of intertidal marsh in the north Delta that provides habitat for juvenile Chinook salmon. [Note that more than one conservation measure may apply to a biological objective.]

Ecologically Hierarchical Organization of Biological Goals and Objectives

SAIC proposes to organize the biological goals and objectives hierarchically, on the basis of ecological scale, as follows:

1. Ecosystem Goals and Objectives
2. Natural Community Goals and Objectives
3. Species-Specific Goals and Objectives

The scope of each ecological scale is as follows:

- **Ecosystem Goals and Objectives.** Ecosystem goals and objectives are focused on improvements to the overall condition of hydrological, physical, chemical, and biological processes in the Delta in support of achieving goals and objectives for covered natural communities and covered species.
- **Natural Community Goals and Objectives.** Natural community goals and objectives are focused on the maintaining or enhancing ecological functions and values of covered natural communities. Achieving natural community goals and objectives also serve to conserve the habitat of associated covered species and other native species.
- **Species-Specific Goals and Objectives.** Species-specific goals and objectives are focused on reducing the effects of certain stressors on covered species to increase their production, abundance, and distribution.

Examples of Biological Goals and Objectives

The following goal and objective statements provide examples of the format, content, and level of detail that may be appropriate for working draft biological goals and objectives at each of the ecological scales.

Example of an Ecosystem-Level Goal and Objectives

Goal ECSY 1: Increase habitat diversity and the range of environmental gradients within the Delta and Suisun Marsh to improve the resiliency of covered fish species' populations to environmental change and variable hydrology.

Objective ECSY 1.1: Maintain and increase the extent, function, and distribution of tidal emergent marsh and valley riparian communities within the Delta and Suisun Marsh to increase the diversity and complexity of intertidal and floodplain habitats.

Objective ECSY 1.2: Maintain and increase the extent of seasonally inundated floodplains within the Delta to increase the diversity and complexity of floodplain habitats, hydrodynamic, and water quality conditions.

Example of a Natural Community Goal and Objectives

Tidal Freshwater Emergent Community

Goal TFEM 1: Protect, enhance, and restore tidal freshwater emergent marsh within the Delta and Suisun Marsh to provide habitat and supporting ecosystem functions for covered fish species and other native marsh-associated species.

Objective TEFM 1.1: Enhance large existing patches of degraded tidal freshwater emergent marsh to improve habitat conditions and supporting ecosystem functions for covered fish species.

Objective TEFM 1.2: Restore large patches of tidal freshwater emergent marsh to provide habitat and ecosystem functions in support of covered fish species.

Example of a Covered Species Goal, Objective, and Conservation Measures

Sacramento Splittail

Goal SASP 1: Reduce the adverse effects of important species stressors within the Delta and Suisun Marsh to improve the production (reproduction, growth, and survival), abundance, and distribution of Sacramento splittail.

Objective SASP 1.1: Maintain and increase the extent of Sacramento splittail spawning habitat in the Delta and Suisun Marsh.

Objective SASP 1.2: Reduce entrainment of juvenile Sacramento splittail at SWP and CVP diversion and pumping facilities.

Process for Formulating Working Draft Biological Goals and Objectives

To formulate working draft biological goals and objectives, SAIC proposes that a focused team of knowledgeable Steering Committee principals and technical staff be convened to advise SAIC on the content and scope of the draft BDCP biological goals and objectives. Based on direction provided by the team, SAIC would prepare a complete working draft of the biological goals and objectives for review by the team. Based on review comments, SAIC would prepare a final working draft of the biological goals and objectives for presentation to the Steering Committee. This effort is expected to be completed by the first Steering Committee meeting in January 2008.